Appl. No. 09/897,572
Atty. Docket No. 7949
Supp. Amdt. dated September 9, 2004
Reply to Office Action of February 3, 2004
Customer No. 27752

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (currently amended) A fuel composition for internal combustion engines, said fuel composition comprising:

(a) at least 5% of fuel hydrocarbons and

(b) at least 10 ppm of nonlinear primary aliphatic Oxo alcohols having at least 11 carbon atoms, wherein at least 0.6 weight fraction of said nonlinear primary aliphatic Oxo alcohols comprise at least one $C_1$-$C_3$ alkyl substituent situated on a third or higher carbon atom counting from an Oxo alcohol hydroxy group and not more than 0.02 weight fraction of said nonlinear primary aliphatic Oxo alcohols comprises a quaternary substituted carbon atom; ~~preferably~~ wherein components (a) and (b) are cosynthesized.

2. (currently amended) A composition according to Claim 1 wherein:

[[•]] said fuel hydrocarbons comprise at least two types of fuel hydrocarbons, ~~preferably~~ wherein said at least two types of fuel hydrocarbons are differentiated in that at a first type of fuel hydrocarbon is present which is selected from Fischer-Tropsch Oxo hydrocarbons and in that a second type of fuel hydrocarbon is present which is other than said first type of fuel hydrocarbon~~, and~~

~~• at least 0.6 weight fraction of said nonlinear primary aliphatic alcohols are nonlinear primary aliphatic Oxo alcohols preferably comprising at least one $C_1$-$C_3$ alkyl substituent situated on a third or higher carbon atom counting from an Oxo alcohol hydroxy group and/or preferably wherein said nonlinear primary aliphatic Oxo alcohols are selected from lubricating, pour point depressing nonlinear primary aliphatic Oxo alcohols; and not more than 0.02 weight fraction of said nonlinear primary aliphatic Oxo alcohols comprises a quaternary substituted carbon atom, more preferably wherein said composition is in the form of a concentrated fuel additive, comprising from 0.2% to 19% of said nonlinear primary aliphatic Oxo alcohol and from 81% to 99.8% of said fuel hydrocarbons; and wherein said nonlinear primary aliphatic Oxo alcohols have an independently variable degree of branching, $DOB_a$, which exceeds the degree of branching of said fuel hydrocarbons, $DOB_f$, according to the relation: $DOB_a = DOB_f + 0.3$; of more preferably wherein said composition is in the form of a concentrated fuel additive comprising: from 5% to 90% of said fuel hydrocarbons and from 10% to 95% of said nonlinear primary~~

~~aliphatic Oxo alcohol; wherein said fuel hydrocarbons are derived from F.T.wax, petroleum wax and mixtures thereof, and said nonlinear primary aliphatic Oxo alcohol is in the form of a two carbon alcohol cut selected from a $C_{12}$-$C_{13}$ cut, a $C_{14}$-$C_{15}$ cut and a $C_{16}$-$C_{17}$ cut; or more preferably wherein said composition is in the form of a concentrated fuel additive, comprising: from 55 to 90% of said fuel hydrocarbons and from 10% to 95% of said nonlinear primary aliphatic Oxo alcohol; wherein said fuel hydrocarbons are derived from F.T.wax, petroleum wax and mixtures thereof, and said nonlinear primary aliphatic Oxo alcohol is in the form of a four carbon alcohol cut selected from a $C_{14}$-$C_{17}$ cut.~~

3. (currently amended) A composition according to Claim 1 ~~comprising: from 5% to 99.9990% of said fuel hydrocarbons and from 10 ppm to 95% of said nonlinear primary aliphatic Oxo alcohols, preferably wherein said nonlinear primary aliphatic Oxo alcohols are selected from lubricating, pour point depressing nonlinear primary aliphatic Oxo alcohols; wherein said fuel hydrocarbons comprise Fischer-Tropsch Oxo hydrocarbons; and said nonlinear primary aliphatic Oxo alcohols have an average of from 11 to 21 carbon atoms; and~~ wherein said composition further comprises a member selected from the group consisting of:

(c) linear long-chain monoalcohols;

(d) nonlinear diols;

(e) linear diols; and

(f) mixtures of two or more of (c)-(e)[[,]]

~~preferably wherein components (b) and (c) are present at a (b):(c) ratio of at least 2:1 by weight, more preferably wherein said fuel hydrocarbons and members of said nonlinear primary aliphatic Oxo alcohols synthesized nonintegrally with components of said fuel hydrocarbons, thereby achieving higher ratios, (b):(c), of said nonlinear primary aliphatic Oxo alcohols to linear Oxo alcohols than can be attained by known Fischer-Tropsch wax processes for making oxygenated fuels are blended together to form a product.~~

4. (canceled)

5. (canceled)

6. (currently amended) A composition according to Claim 2 wherein the composition comprises from 20% to 95% of said nonlinear primary aliphatic Oxo alcohols; ~~and wherein said fuel hydrocarbons, (a), comprise:~~

~~(i) from 5% to 80% of a first type of fuel hydrocarbons selected from Fischer-Tropsch Oxo hydrocarbons;~~

and wherein at least 0.8 weight fraction of said nonlinear primary aliphatic Oxo

alcohols ~~comprises~~ comprise at least one $C_1$-$C_3$ alkyl substituent situated on a third or higher carbon atom counting from an Oxo alcohol hydroxy group; and not more than 0.01 weight fraction of said nonlinear primary aliphatic Oxo alcohols comprises a quaternary substituted carbon atom~~, and preferably wherein said composition is blended with any fuel hydrocarbon, fuel blend stock or fule not comprising said first type of fuel hydrocarbon to form a fuel blend stock or finished fuel composition~~.

7. (canceled)

8. (currently amended) A composition according to Claim [[2]] 1 ~~wherein the composition comprises from 0.1% to 19% of said nonlinear primary aliphatic Oxo alcohol; and~~ wherein said fuel hydrocarbons, (a), comprise:

(i) from 0.05% to 18% of a first type of fuel hydrocarbons selected from Fischer-Tropsch Oxo hydrocarbons and

(ii) from 80% to 99% of a second type of fuel hydrocarbons selected from Fischer-Tropsch non-Oxo hydrocarbons;

~~and wherein at least 0.8 weight fraction of said nonlinear primary aliphatic Oxo alcohols comprises at least one $C_1$-$C_3$ alkyl substituent situated on a third or higher carbon atom counting from an Oxo alcohol hydroxy group; and not more than 0.001 weight fraction of said nonlinear primary aliphatic Oxo alcohols comprises a quaternary substituted carbon atom, preferably~~ wherein said second type of fuel hydrocarbons and said first type of fuel hydrocarbons are present in a ratio of at least 10: 1 by weight~~, preferably wherein said nonlinear primary aliphatic Oxo alcohols and said second type of fuel hydrocarbons have independently varying numbers of carbon atoms and degrees of branching or wherein said second type of fuel hydrocarbons has a broader range of number of carbon atoms than said nonlinear primary aliphatic Oxo alcohols or wherein said second type of fuel hydrocarbon has a lesser degree of branching than said nonlinear primary aliphatic Oxo alcohols~~.

9. (canceled)

10. (currently amended) A composition according to Claim 2 ~~wherein the composition comprises from 0.01% to 10% of said nonlinear primary aliphatic Oxo alcohol; and~~ wherein said fuel hydrocarbons, (a), comprise:

(i) from 0.005% to 12% of a first type of fuel hydrocarbons selected from Fischer-Tropsch Oxo hydrocarbons;

(ii) from 0% to 99.8% of a second type of fuel hydrocarbons selected from Fischer-Tropsch non-Oxo hydrocarbons; and

(iii) from 0.1% to 99.995%of at least one other type of fuel hydrocarbons selected from fuel hydrocarbons other than (i) and (ii);

~~and wherein at least 0.6 weight fraction of said nonlinear primary aliphatic Oxo alcohols, (b), comprises at least one $C_1$-$C_3$ alkyl substituent situated on a third or higher carbon atom counting from an Oxo alcohol hydroxy group, preferably~~ wherein the said at least one other type of fuel hydrocarbons comprises at least 0.1 weight fraction saturated cyclic hydrocarbons; and all other types of fuel hydrocarbons present comprise less than 0.05 weight fraction of saturated cyclic hydrocarbons, ~~preferably~~ wherein said other type, (iii), of fuel hydrocarbons and said first type of fuel hydrocarbons are present in a ratio of at least 10:1 by weight.

11. (currently amended) A composition according to Claim 2 wherein ~~said combustion engine is a diesel engine;~~ said fuel hydrocarbons comprise from 10 to 20 carbon atoms; and said composition [[has]] comprises

[[•]] a flow point of- 25 deg. C or below;

[[•]] a sulfur content of[[<]] less than 50 ppm; and

[[•]] an aromatics content of less than about 10%[[.]] and

~~preferably~~ said composition comprises:

(a) at least 90% of said fuel hydrocarbons; and

(b) from 100 ppm to 5% of said nonlinear primary aliphatic Oxo alcohols having from 11 to 21 carbon atoms.

12. (currently amended) A composition according to Claim 2 wherein ~~said combustion engine is a jet engine;~~ said fuel hydrocarbons comprise from 9 to 14 carbon atoms; and wherein said composition [[has]] comprises

[[•]] a flow point of - 47 deg. C or below; and

[[ •]] a smoke point of at least 18 mm wick; and

~~preferably~~ wherein said composition comprises:

(a) at 90% of said fuel hydrocarbons; and

(b) from 100 ppm to 5% of said nonlinear primary aliphatic Oxo alcohols having from 11 to 17 carbon atoms.

13. (currently amended) A composition according to Claim 2 wherein ~~said combustion engine is a new compact diesel or other nontraditional engine;~~ said fuel hydrocarbons comprise from 5 to 14 carbon atoms; and said composition has

[[•]] a flow point of- 25 deg. C or below,

[[•]] a sulfur content of[[<]] less than 50 ppm; and

[[•]] an aromatics content of less than 10%; and

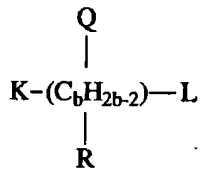
~~preferably~~ wherein said composition comprises:

(a) at least 90% of said fuel hydrocarbons; and

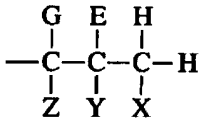
(b) from 100 ppm to 10% of said nonlinear primary aliphatic Oxo alcohols.

14. (canceled)

15. (currently amended) A composition according to Claim [[2]] 1 wherein said nonlinear primary aliphatic Oxo alcohols have the formula:



[[R]] wherein $C_bH_{2b-2}$ is a linear saturated hydrocarbyl and K, L, Q and R are substituents; K is $CH_3$, L is the moiety:



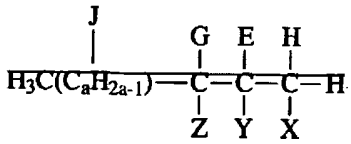
wherein one of X and Y and Z is $CH_2OH$; and

any of X and Y and Z which is not $CH_2OH$ is H;

b is an integer selected such that the total carbon content of said nonlinear primary aliphatic Oxo alcohol is from 11 to 21;

E, G and Q are selected from H, methyl, ethyl, propyl and butyl provided that at least one of E, G and Q is not H;

and R is selected from H, methyl, ethyl, propyl and butyl~~, preferably wherein when Q and R are both different from H, Q and R are attached to different carbon atoms of said linear saturated hydrocarbyl, more preferably said nonlinear primary aliphatic Oxo alcohols have the formula:~~



~~wherein one of X and Y and Z is $CH_2OH$;~~

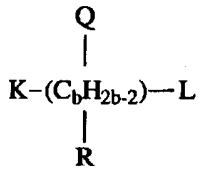
~~any of X and Y and Z which is not $CH_2OH$ is H;~~

~~E, G and J are selected from H and methyl provided that at least one of E, G and J is methyl; the moiety $C_aH_{2a+1}$ is a linear saturated hydrocarbyl; and~~

~~a is an integer selected such that the total carbon content of said nonlinear primary aliphatic Oxo alcohol is from 11 to 21~~.

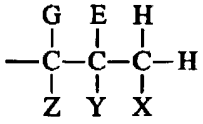
16. (canceled)

17. (currently amended) A composition according to Claim 3 wherein said nonlinear diols have the formula:



wherein $C_bH_{2b-2}$ is a linear saturated hydrocarbyl and K,L, Q and R are substituents; K and L are

independently selected from:



wherein one of X and Y and Z is $CH_2OH$; and any of X and Y and Z which is not $CH_2OH$ is H; b is an integer selected such that the total carbon content of said nonlinear diol is from 12 to 22;

E, G and Q are selected from H, methyl, ethyl, propyl and butyl provided that at least one of E, G and Q is not H;

and R is selected from H and methyl~~, preferably said nonlinear diols are nonlinear Oxo diols, and wherein when Q and R are both different from H, Q and R are attached to different carbon atoms of said linear saturated hydrocarbyl, more preferably said nonlinear primary aliphatic Oxo alcohols, (b), and said nonlinear diols, (d), are present at a ratio (b) : (d), of from 1000:1 to 2:1 by weight, preferably said nonlinear diols are present at a level of from 0.001 ppm to 30% by weight~~.

18. (withdrawn) A fuel composition for use as jet or diesel fuel, said composition comprising the product of blending:
(a) from 90% to 99.9% of fuel hydrocarbons having from 9 to 20 carbon atoms; and (b) from 100 ppm to 10% of nonlinear primary aliphatic Oxo alcohols, wherein said alcohols are the product of a process comprising:

(I) a first stage comprising: providing a member selected from

(A) F.T. wax;
(B) conventional petroleum wax;

(C) a fuel hydrocarbon distillation cut in the Jet / diesel range, said distillation cut comprising at least 0.8 weight fraction of linear paraffins, mono-, di- or tri-$C_1$-$C_3$ branched acyclic paraffins, or mixtures thereof; (D) mixtures thereof,

(II) a pre-Oxo stage comprising sequentially or concurrently delinearizing and preparing the product of the first stage for Oxo reaction, said stage comprising two or more steps in any order selected from steps capable of effecting (i) chain-breaking, (ii) branch-forming and (iii) olefin-forming; and

(III) an Oxo/post-Oxo stage comprising converting the product of the pre-Oxo stage to said alcohol, said stage comprising at least one Oxo step and further optionally comprising an Oxo aldehyde to alcohol conversion step and / or a step of hydrogenation of residual olefins to paraffins.

19. (withdrawn) A fuel composition for use as jet or diesel fuel, said composition comprising the product of blending:
(a) from 90% to 99.9% of fuel hydrocarbons having from 9 to 20 carbon atoms; and

(b) nonlinear primary aliphatic Oxo alcohols, wherein said alcohols are the product of a process comprising:
(I) a first stage comprising: providing a member selected from propylene / butylene monoolefin oligomers having from 0.5 to 2.0 methyl groups per chain, said oligomers being prepared using molecular sieves selected from ZSM-23 and functional equivalents and

(II) an Oxo/post-Oxo stage comprising at least one Oxo step and further optionally comprising an aldehyde to alcohol conversion step and / or a step of hydrogenation of residual olefins to paraffins.

20. (withdrawn) A method of use of a composition according to Claim 1 comprising a step of combusting said composition as fuel in a vehicle having a power system consisting of a 10,000 psi or greater direct injection diesel engine or a hybrid power system comprising said engine and an electric motor, preferably additionally comprising a step of storing said composition in a tank and a step of passing said composition from said tank to said engine, wherein said method said composition is pumpable at temperatures down to - 25 deg. C.

21. (withdrawn) A method of use of a composition according to Claim 18 comprising a step of combusting said composition as fuel in a vehicle having a power system consisting of a 10,000 psi or greater direct injection diesel engine or a hybrid power system comprising said engine and an electric motor, preferably additionally comprising a step of storing said composition in a tank and a step of passing said composition from said tank to said engine, wherein said method said composition is pumpable at temperatures down to - 25 deg. C.

22. (withdrawn) A method of use of a composition according to Claim 19 comprising a step of combusting said composition as fuel in a vehicle having a power system consisting of a 10,000 psi or greater direct injection diesel engine or a hybrid power system comprising said engine and an electric motor, preferably additionally comprising a step of storing said composition in a tank and a step of passing said composition from said tank to said engine, wherein said method said composition is pumpable at temperatures down to - 25 deg. C.

23. (withdrawn) A method of use of a composition according to Claim 1 comprising a step of passing said composition from a fuel tank at temperatures down to - 47 deg. C to a jet engine followed by a step of combusting said composition as fuel in said jet engine at elevated altitudes and / or at low ambient temperatures.

24. (withdrawn) A method of use of a composition according to Claim 18 comprising a step of passing said composition from a fuel tank at temperatures down to - 47 deg. C to a jet engine followed by a step of combusting said composition as fuel in said jet engine at elevated altitudes and / or at low ambient temperatures.

25. (withdrawn) A method of use of a composition according to Claim 19 comprising a step of passing said composition from a fuel tank at temperatures down to - 47 deg. C to a jet engine followed by a step of combusting said composition as fuel in said jet engine at elevated altitudes and / or at low ambient temperatures.

Claims 26-29 (canceled)

30. (withdrawn) Use of a composition according to Claim 18 as fuel for an engine selected from two-cycle and four-cycle engines having a compression ratio of from 5:1 to 40:1 and jet or turbine engines utilizing flame or surface combustion.

31. (withdrawn) Use of a composition according to Claim 19 as fuel for an engine selected from two-cycle and four-cycle engines having a compression ratio of from 5:1 to 40:1 and jet or turbine engines utilizing flame or surface combustion.

32. (original) A composition according to Claim 1 further comprising a non-zero amount of at least one of the following components:
- from 0% to no more than 3 % olefins;
- from 0% to no more than 15 % monocyclic aromatics;
- from 0% to no more than 2% $C_1$-$C_9$ carboxylates; and
- from 0% to no more than 0.5 % aldehydes.

33. (withdrawn) A composition according to Claim 18 further comprising a non-zero amount of at least one of the following components:
- from 0% to no more than 3 % olefins;
- from 0% to no more than 15 % monocyclic aromatics;
- from 0% to no more than 2% $C_1$-$C_9$ carboxylates; and
- from 0% to no more than 0.5 % aldehydes.

34. (withdrawn) A composition according to Claim 19 further comprising a non-zero amount of at least one of the following components:

- from 0% to no more than 3 % olefins;
- from 0% to no more than 15 % monocyclic aromatics;
- from 0% to no more than 2% $C_1$-$C_9$ carboxylates; and
- from 0% to no more than 0.5 % aldehydes.

35. (original) A composition according to Claim 10 wherein:

- said first type of fuel hydrocarbons, (i), comprises from 0% to no more than 10% cyclic nonaromatics;
- said second type of fuel hydrocarbons, (ii), comprises from 0% no more than 10% cyclic nonaromatics; and
- said other type of fuel hydrocarbons, (iii), comprises at least 5% cyclic nonaromatics.

36. (canceled)

37. (currently amended) A composition according to Claim [[2]] 1 wherein said nonlinear primary aliphatic Oxo alcohols are substantially free from methyl butanols, ethylhexanols, propylheptanols, natural alcohol mixtures, aminoalcohols, aromatic alcohols, glycols having linear hydrocarbon chains, alcohols comprising the aldol condensation product of aldehydes; alcohols comprising the Oxo product of linear internal olefins, and alcohols comprising quaternized carbon and consisting of the Oxo product of acid-catalyzed propylene / butylene oligomerization.

38. (original) A composition according to Claim 3 wherein said nonlinear primary aliphatic Oxo alcohols are substantially free from methyl butanols, ethylhexanols, propylheptanols, natural alcohol mixtures, aminoalcohols, aromatic alcohols, glycols having linear hydrocarbon chains, alcohols comprising the aldol condensation product of aldehydes; alcohols comprising the Oxo product of linear internal olefins, and alcohols comprising quaternized carbon and consisting of the Oxo product of acid-catalyzed propylene / butylene oligomerization.

39. (original) A composition according to Claim 10 wherein said nonlinear primary aliphatic Oxo alcohols are substantially free from methyl butanols, ethylhexanols, propylheptanols, natural alcohol mixtures, aminoalcohols, aromatic alcohols, glycols having linear hydrocarbon chains, alcohols comprising the aldol condensation product of aldehydes; alcohols comprising the Oxo product of linear internal olefins, and alcohols comprising quaternized carbon and consisting of the Oxo product of acid-catalyzed propylene / butylene oligomerization.

Claims 40-44 (canceled)

45. (original) A composition according to Claim 1 wherein said composition is in the form of a concentrated fuel additive and wherein said fuel hydrocarbons are substantially free from hydrocarbons other than Fischer-Tropsch - Oxo hydrocarbons.

46. (withdrawn) A composition according to Claim 18 wherein said composition is in the form of a concentrated fuel additive and wherein said fuel hydrocarbons are substantially free from hydrocarbons other than Fischer-Tropsch - Oxo hydrocarbons.

47. (withdrawn) A composition according to Claim 19 wherein said composition is in the form of a concentrated fuel additive and wherein said fuel hydrocarbons are substantially free from hydrocarbons other than Fischer-Tropsch - Oxo hydrocarbons.

48. (original) A composition according to Claim 1 wherein said composition is substantially free from native F.T. alcohols.

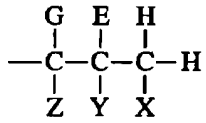
49. (withdrawn) A composition according to Claim 18 wherein said composition is substantially free from native F.T. alcohols.

50. (withdrawn) A composition according to Claim 19 wherein said composition is substantially free from native F.T. alcohols.

Claims 51-56 – (canceled)

57. (withdrawn) A composition wherein $C_bH_{2b-2}$ is a linear saturated hydrocarbyl and K,L, Q and R

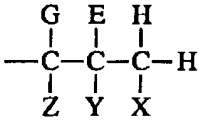
are substituents; K and L are independently selected from:



wherein one of X and Y and Z is $CH_2OH$; and according to Claim 18 wherein said nonlinear primary aliphatic Oxo alcohols are substantially the only lubricity-improving component.

58. (withdrawn) A composition wherein $C_bH_{2b-2}$ is a linear saturated hydrocarbyl and K,L, Q and R

are substituents; K and L are independently selected from:



wherein one of X and Y and Z is $CH_2OH$; and according to Claim 19 wherein said nonlinear primary aliphatic Oxo alcohols are substantially the only lubricity-improving component.

59. (original) A composition according to Claim 1 wherein said nonlinear primary aliphatic alcohols are monohydric.

60. (original) A composition according to Claim 1 that is substantially free from diols.

61. (original) A composition according to Claim 1 wherein said composition further comprises: (c) from 0.001 ppm to 30% of linear $C_{11}$ to $C_{21}$ alcohols.

62. (currently amended) A composition according to Claim [[1]] 3 ~~further~~ comprising:

(d) from 0.001 ppm to 30% of $C_{12}$ to $C_{22}$ nonlinear primary aliphatic diols.

63. (currently amended) A composition according to Claim [[1]] 3 ~~further~~ comprising

(e) from 0.0001 ppm to 3% of $C_{12}$ to $C_{22}$ linear primary aliphatic diols.

64. (currently amended) A composition according to Claim [[1]] 3 ~~further~~ comprising

(f) from 0.001 ppm to 30% of a mixture of members selected from:

linear $C_{11}$ to $C_{21}$ monoalcohols; $C_{12}$ to $C_{22}$ nonlinear primary aliphatic diols; and $C_{12}$ to $C_{22}$ linear primary aliphatic diols.

65. (currently amended) A composition according to Claim 1 further comprising:

(g) from 0.001 ppm to % of a fuel adjunct selected from

(I) diesel adjuncts comprising diesel ignition improvers, diesel stability improvers, diesel corrosion inhibitors, diesel detergent additives, diesel cold flow improvers, diesel combustion improvers, other conventional diesel adjuncts, and mixtures thereof; [[and]] or

(II) aviation fuel adjuncts comprising jet fuel ignition improvers, jet fuel stability improvers, jet fuel corrosion inhibitors, jet fuel detergent additives, jet fuel cold flow improvers, jet fuel combustion improvers, jet fuel luminosity reducers/radiation quenchers, jet fuel antimicrobial/antifungal adjuncts, jet fuel antistats, other conventional jet fuel adjuncts and mixtures thereof.

66. (canceled)

67. (withdrawn) A method of transporting a composition according Claim 18 comprising pumping said composition in a pipeline under low ambient temperature conditions.

68. (withdrawn) A method of transporting a composition according Claim 19 comprising pumping said composition in a pipeline under low ambient temperature conditions.

69. (canceled)

70. (withdrawn) A method according to Claim 67 wherein said pumping is carried out batchwise and alternating with pumping of batches of conventional fuels in said pipeline.

71. (withdrawn) A method according to Claim 68 wherein said pumping is carried out batchwise and alternating with pumping of batches of conventional fuels in said pipeline.

72. (withdrawn) A process for making a fuel composition, said process comprising a step of blending:

(a) from 90% to 99.9% of fuel hydrocarbons having from 9 to 20 carbon atoms; and

(b) from 100 ppm to 10% of nonlinear primary aliphatic Oxo alcohols, wherein said alcohols are produced by the following stages:

(I) a first stage comprising: providing a member selected from

(A) F.T. wax;
(B) conventional petroleum wax;

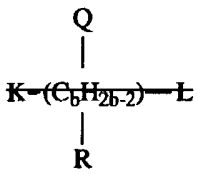
(C) a fuel hydrocarbon distillation cut in the Jet / diesel range, said distillation cut comprising at least 0.8 weight fraction of linear paraffins, mono-, di- or tri-$C_1$-$C_3$ branched acyclic paraffins, or mixtures thereof,

(D) mixtures thereof,

(II) a pre-Oxo stage comprising sequentially or concurrently delinearizing and preparing the product of the first stage for Oxo reaction, said stage comprising two or more steps in any order selected from steps capable of effecting (i) chain-breaking, (ii) branch-forming and (iii) olefin-forming; and

(III) an Oxo/post-Oxo stage comprising converting the product of the pre-Oxo stage to said alcohol, said stage comprising at least one Oxo step and further optionally comprising an Oxo aldehyde to alcohol conversion step and / or a step of hydrogenation of residual olefins to paraffins.

73. (currently amended) A composition according to Claim 17 ~~comprising nonlinear diols having the formula:~~



~~any of X and Y and Z which is not $CH_2OH$ is H;~~

~~b is an integer selected such that the total carbon content of said nonlinear diol is from 12 to 22;~~

~~E, G and Q are selected from H, methyl, ethyl, propyl and butyl provided that at least one of E, G and Q is not H;~~

~~and R is selected from H and methyl, preferably~~ wherein said nonlinear diols are nonlinear Oxo diols, and wherein when Q and R are both different from H, Q and R are attached to different carbon atoms of said linear saturated hydrocarbyl, ~~more preferably said nonlinear primary aliphatic Oxo alcohols, (b), and said nonlinear diols, (d), are present at a ratio (b) : (d), of from 1000:1 to 2:1 by weight, preferably said nonlinear diols are present at a level of from 0.001 ppm to 30 % by weight~~.

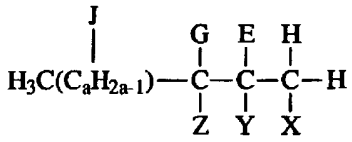
74. (new) A composition according to Claim 1 wherein said composition comprises from 0.2% to 19% of said nonlinear primary aliphatic Oxo alcohol and from 81% to 99.8% of said fuel hydrocarbons; wherein said nonlinear primary aliphatic Oxo alcohols have an independently variable degree of branching, $DOB_a$, which exceeds the degree of branching of said fuel hydrocarbons, $DOB_F$, according to the relation: $DOB_a = DOB_F + 0.3$.

75. (new) A composition according to Claim 1 wherein said composition comprises from 5% to 90% of said fuel hydrocarbons and from 10% to 95% of said nonlinear primary aliphatic Oxo alcohol; wherein said fuel hydrocarbons are derived from Fischer Tropsch wax, petroleum wax and mixtures thereof, and said nonlinear primary aliphatic Oxo alcohol is in the form of a two-carbon alcohol cut selected from a $C_{12}$-$C_{13}$ cut, a $C_{14}$-$C_{15}$ cut and a $C_{16}$-$C_{17}$ cut.

76. (new) A composition according to Claim 1 wherein said composition comprises from 55 to 90% of said fuel hydrocarbons and from 10% to 95% of said nonlinear primary aliphatic Oxo alcohol wherein said fuel hydrocarbons are derived from Fischer Tropsch wax, petroleum wax and mixtures thereof, and said nonlinear primary aliphatic Oxo alcohol is in the form of a four-carbon alcohol cut selected from a $C_{14}$-$C_{17}$ cut.

77. (new) A composition according to Claim 15 wherein when Q and R are both different from H, and Q and R are attached to different carbon atoms of said linear saturated hydrocarbyl.

78. (new) A composition according to Claim 15 wherein said nonlinear primary aliphatic Oxo alcohols have the formula:



wherein one of X and Y and Z is $CH_2OH$;

any of X and Y and Z which is not $CH_2OH$ is H;

E, G and J are selected from H and methyl provided that at least one of E, G and J is methyl; the moiety $C_aH_{2a-1}$ is a linear saturated hydrocarbyl; and

a is an integer selected such that the total carbon content of said nonlinear primary aliphatic Oxo alcohol is from 11 to 21.

79. (new) A composition according to Claim 17 wherein said nonlinear diols are nonlinear Oxo diols, and wherein when Q and R are both different from H, Q and R are attached to different carbon atoms of said linear saturated hydrocarbyl.

80. (new) A composition according to Claim 3 comprising nonlinear diols, wherein said nonlinear primary aliphatic Oxo alcohols, (b), and said nonlinear diols, (d), are present at a ratio (b) : (d), of from 1000:1 to 2:1 by weight.

81. (new) A composition according to Claim 80 wherein said nonlinear diols are present at a level of from 0.001 ppm to 30% by weight.